ABSTRACT OF THE DISCLOSURE

The present invention discloses techniques capable of selectively affecting and adjusting a volume of neural tissue in the brain, parenchyma of the spinal cord, or a peripheral nerve. The invention preferably utilizes a lumen having at least one opening at its distal end that is capable of directing a lead outwardly along a predetermined trajectory. The lumen is capable of accepting a plurality of leads that can project outward in different directions from the distal end of the lumen. The leads have one or more electrodes at its ends and are thereby configured by the lumen in accordance with a predetermined two- or three-dimensional geometry. Anode/cathode relationships may be then established between the electrodes as desired by the operator to stimulate the neural tissue surrounding these electrodes. The operator may also adjust the stimulation to selectively stimulate the desired portion of the brain, spinal cord, peripheral nerve. In other embodiments, the present invention may be implemented to provide drug infusion. Sensor feedback may be implemented to adjust the treatment therapy.

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